

Screening for ADHD Traits in University Students: Prevalence, Traits and Departmental Variations

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This research addresses the critical need for screening attention-deficit/hyperactivity disorder (ADHD) traits in university students, a demographic often overlooked in ADHD studies. The primary aim was to identify potential indicators of ADHD and examine the prevalence and severity of these traits among different student groups. A cross-sectional survey design with non-probability purposive sampling strategy was used. The study sample comprised of ($N=200$) students from the speech therapy and social work departments of a university in Greece. The assessment measures included a specially designed questionnaire, Brown Attention-Deficit Disorder Symptom Assessment Scale (BADDS) for ADHD screening. The study confirms ADHD traits in university students, showing significant variations between speech-language pathology and social work students. Specifically, Speech Therapy students had significantly lower levels of impulsive decision making ($p=.001$), impulsive speech and communication ($p=.05$), and reduced feelings of underachievement ($p=.001$) than Social Work students. Conversely, social work students were found to have significantly higher levels of emotional reactivity and sensitivity ($p = .005$) and irascibility ($p = .005$). This study reveals ADHD symptoms in university students, underscoring the demand for targeted screening, tailored interventions, and personalized support services.

Keywords: Screening for ADHD, University students, Traits, Prevalence

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Introduction

This research examines Attention-Deficit/Hyperactivity Disorder /traits (ADHD) among university students, a population that has been historically underrepresented in the ADHD literature despite an increase in diagnoses across all age groups (Koziol, 1999; Selikowitz, 2021). To address the misconception that ADHD is limited to children, this study will examine the persistence of the condition into adulthood and its impact on higher education (Polanczyk et al., 2007; Sacchetti & Lefler, 2014). This study will assess the prevalence of ADHD and its impact on students' academic and social lives. Given ADHD's potential to affect academic performance and personal growth, the research underscores the need for universities to develop strategies to support affected students (Daley & Birchwood, 2010). Using established instruments such as the Conners' Rating Scales (Conners, 1997; Conners et al., 1999), the study aims to measure the incidence of ADHD symptoms and their various manifestations, from inattention to hyperactivity and impulsivity (Levine et al., 2019; Wender, 1998).

Findings will guide the creation of targeted supports that are tailored to the needs of students. Highlighting the need to understand ADHD in adults, particularly in academic settings, the research has screened students in speech therapy and social work departments at a Greek university for ADHD indicators. ADHD symptoms in adults can be more subtle yet impactful, affecting organizational skills, concentration, and the ability to manage tasks and interactions (Asherson & Buitelaar, 2015; Jarrett, 2016; Barkley, 2008). Hyperactivity can turn into restlessness, and impulsivity can lead to poor decision making (APA, 2022). The following section describes adult-relevant ADHD traits classified in DSM-5 that profoundly affect daily functioning (Arnold et al., 2015). In addition, the concept of academic achievement satisfaction will be considered, as it represents the subjective fulfilment individuals feel about their educational achievements (Doménech-Betoret et al., 2017; Henning et al., 2021).

Emotion dysregulation, a critical aspect of ADHD, affects how individuals manage emotional responses to daily challenges. In ADHD, this can manifest as excessive emotional expression, emotional lability, and misallocated attention to emotional stimuli, often leading to irritability

and reactive aggression (Shaw et al., 2014; Astenvald et al., 2022). Diagnostic tools for adults with ADHD, such as the Adult ADHD Clinical Diagnostic Scale (ACDS) and the Brown Attention-Deficit Disorder Symptom Assessment Scale (BADDS), are tailored for adult symptoms. The ACDS uses a structured interview based on DSM criteria, while the BADDS assesses attention, memory, and mood (Adler & Cohen, 2004; Kessler et al., 2010; Brown, 1996). The Conners' Adult ADHD Rating Scales (CAARS) provide additional dimensions of ADHD symptoms (Conners, 1997; Conners et al., 1999; Pagán et al., 2022). The PAI, on the other hand, provides a comprehensive view of psychological well-being beyond ADHD (Hopwood et al., 2013). These tools are critical for developing interventions and enhancing student support in higher education (Lancaster & Liljequist, 2018; Harrison et al., 2019). The rationale for this study focuses on the early identification and support of university students with ADHD traits, with findings showing these traits and the effectiveness of the method used. Departmental differences in trait prevalence underscore the need for nuanced screening across academic settings.

Objectives of the study

The study aims to identify potential indicators of ADHD-related traits and assess any differences in the prevalence of these traits between student groups. This screening is crucial to understanding how ADHD may impact students' academic and social well-being and to develop strategies and interventions. The study used a tailored questionnaire, aligned with standardized ADHD scales, to screen speech therapy and social work students at a Greek university for ADHD traits.

Hypotheses of the study

The following hypotheses of the present study were formulated based on the literature review of ADHD traits in university students.

1. Departmental Variation: There may be discernible differences in the occurrence and intensity of ADHD-related traits between students in the Speech-Language Therapy Department and those in the Social Work Department, which may influence the need for evaluations.

2. **Feelings of Academic Underachievement:** A proportion of students at the Greek University may have perceptions of academic underachievement, which may be associated with ADHD-related traits.
3. **Information Processing:** Students who exhibit ADHD-related traits may have difficulty filtering and processing incoming information, possibly resulting in cognitive overload and decreased academic efficiency.
4. **Cognitive Engagement:** Students who exhibit traits suggestive of ADHD are expected to have more difficulty sustaining attention during tasks that are repetitive or lack sufficient stimulation than their peers.
5. **Impulsivity:** The study will examine whether students with ADHD-related traits exhibit increased impulsivity in their behavior and decision-making processes.
6. **Emotional Regulation:** It is hypothesized that students with traits indicative of ADHD may exhibit greater emotional variability than those without such traits.
7. **Motor restlessness:** It is hypothesized that students who exhibit ADHD-related traits may have a greater tendency to engage in continuous movement, which indicates restlessness and hyperactivity. These hypotheses will frame the subsequent investigation and guide the method employed to provide a comprehensive understanding of the multifaceted nature of ADHD in the university student population.

Method

Research Design

This study implemented a cross-sectional survey design specifically for screening ADHD symptoms among students and examining their prevalence within two distinct student groups at a Greek university. The goal was to screen for potential indicators of ADHD and to understand its potential impact on academic and social functioning, thus informing the development of interventions.

Sample and Sampling Strategy

A convenience sampling strategy was used to recruit 200 female Greek university students from Speech Therapy and Social Work departments, with 100 from each field. This strategy allowed for the efficient collection of data within the university setting.

Inclusion and Exclusion Criteria

Active enrollment in the Speech Therapy or Social Work programs was the primary inclusion criterion. The only exclusion criterion was non-completion of the questionnaire, which facilitated a high response rate and optimal use of the distributed questionnaires.

Measures

Brown Attention-Deficit Disorder Symptom Assessment Scale (BADDs). For the collection of research data, a questionnaire was designed by the team based on standardized scales, such as the Brown Attention-Deficit Disorder Symptom Assessment Scale (BADDs). It consisted of 23 closed-type questions formatted as a scale and gauged various behavioral and cognitive aspects to identify potential ADHD symptoms, challenges, and coping strategies.

Data Collection

The questionnaire was disseminated to 200 female Greek university students, comprising 100 from the Speech Therapy department and 100 from Social Work of a Greek University. The selection of the sample was undertaken without regard to origin, family background, or socioeconomic status. Each respondent was informed that participation was optional, and discontinuation of the questionnaire at any point was permissible. An approximate duration of 15 minutes was observed for the completion of the questionnaire. Data were collected from January to May 2022 in the Departments of Speech Therapy and Social Work at a Greek university.

Encoding and Statistical Analysis

Each potential answer to a question was encoded with an integer based on the count of potential answers. Subsequently, data were entered into a computer system, wherein each variable corresponded to a specific question. For the data input and statistical analysis, SPSS software was employed. Descriptive Distribution. The results were compiled into

structured tables. The name of each variable and the associated question to which it pertained were identified. The groups under examination and the totality of responses were also documented. Measurable variables were depicted with their mean value, standard deviation, minimum, and maximum values, while non-measurable variables were illustrated with their frequency and relative frequency. Statistical Comparisons to ascertain if specific categories of respondents yielded varied answers, tables were used wherein responses of the two pertinent questions were combined. The statistical test used for the verification of observed differences was the χ^2 -test. In the statistical analysis, differences deemed statistically significant corresponded to a probability of $p < 0.05$. The SPSS software package was employed for the entirety of the statistical analysis.

Ethical considerations

Strict adherence to the Nuremberg code and the Helsinki declaration was maintained to ensure the protection of individuals from any research harm. Before the initiation of the questionnaire, the purpose of the research was explained, minimal disruption to daily life and ongoing work was guaranteed, and the anonymity of the questionnaire was emphasized.

Results

The current study aimed to identify ADHD-related traits among university students within the Speech Therapy and Social Work departments. A meticulously distributed set of 200 questionnaires achieved a perfect return rate, providing a robust data set for analysis. Chi-squared test results are used to determine the statistical significance of departmental differences in each behavior category. Finding revealed feelings of underachievement are significantly higher among Social Work students, with a p-value of .001 indicating a meaningful difference between the two groups. In addition, Speech-Language Pathology students report less difficulty maintaining focus while reading and in group discussions, with marginal significance ($p = .05$), suggesting greater ability to focus in these areas compared to their Social Work peers. In contrast, both departments reported low levels of interruptive communication, with some social work participants experiencing more difficulty maintaining focus while reading.

Excessive mental chatter	Speech	21(21,0)	32 (32,0)	19(19,0)	11(11,0)	13(13,0)		10010	6,515	.789
	Therapy	15(15,0)	21 (21,0)	24(24,0)	18(18,0)	15(15,0)	4(4,0)	0200		
	Social Work	36(18,0)	53 (26,5)	43(21,5)	29(14,5)	28 (14)	7(7,0)			
	Total									
Overwhelme d mind	S&	27(27,0)	36 (36,0)	19(19,0)	10(10,0)	5(5,0)	11(5,5)	10010		
	Language	24 (24,0)	20 (20,0)	25(25,0)	15(15,0)	7(7,0)	3(3,0)	0200	9,899	.698
	Therapy	51 (25,5)	56 (28,0)	44(22,0)	25(12,5)	12 (6)	9(9,0)			
	Social Work									
Excessive daydreaming	Total									
	Speech	12 (12,0)	19 (19,0)	14(14,0)	23(23,0)	25 (25)	12(12,0)	10010		
	Therapy	21(21,0)	18 (18,0)	17(17,0)	14(14,0)	18(18)	7(7,0)	0200	7,416,	
	Social Work	33(16,5)	37 (18,5)	31(15,5)	37(18,5)	43(22,5)	19 (9,5)			.694
	Total									

*p < .05, ***p < .001

Table 2 provides a comparative analysis of behaviors such as irascibility and concentration difficulties between speech therapy and social work students. It reports the frequency and proportion of these behaviors and uses chi-squared tests to determine if the observed differences are statistically significant.

	Total	70 (35.0)	43 (21.5)	38(19.0)	27(13.5)	14 (7.0)	8(4.0)	200		
Mood instability	Speech	2(7.0)	21 (21.0)	21 (21.0)	22(22.0)	24(24.0)	10(10.0)	100		
	Therapy									
	Social Work	5 (5.0)	14(14.0)	14(14.0)	18(18.0)	32(32.0)	17(17.0)	100	7,443	.698
	Total	7 (3.5)	35 (17.5)	35 (17.5)	40 (20.5)	58 (28.0)	27(13.5)	200		
Difficulty with task	Speech	24 (24.0)	26 (26.0)	21 (21.0)	20 (20.0)	7 (7.0)	2 (2.0)	100		
	Therapy	14(14.0)	19 (19.0)	23 (23.5)	17 (17.0)	15 (15.0)	12(12.0)	100	14,107	.05
Prioritization	Social Work	38(19.0)	45 (22.5)	44 (22.0)	37 (18.5)	22 (11.0)	14 (7.0)	200		
	Total									

*p < .05, ***p < .001

Table 3 illustrates the prevalence of various impulsive behaviors and mood instability across two university departments: Speech Therapy and Social Work. The behaviors examined include impulsive speech, decision making, communication, mood instability, and difficulty prioritizing tasks. Chi-squared test results are provided to determine the statistical significance of departmental differences in each behavior category. Demonstrates a distribution of impulsive behaviors and mood instability across students from the Speech Therapy and Social Work departments. Notably, impulsive decision-making is significantly higher in the Social Work department, with a very strong statistical difference ($p < 0.001$). Impulsive speech and communication also show significant differences ($p < 0.05$) across departments. Mood instability, however, does not present a significant variation between departments, indicating it's a common trait among students. Task prioritization difficulty is significantly more prevalent in Speech Therapy ($p < 0.05$).

Discomfort with stillness	Speech Therapy	16 (16,0)	20 (20,0)	21 (21,0)	21 (21,0)	15 (15,0)	7 (7,0)	100	12,768	.005
	Social Work	13 (13,0)	10 (10,0)	17 (17,0)	18 (18,0)	20 (20,0)	22 (22,0)	100		
	Total	29 (14,5)	30 (15,0)	38 (19,0)	39 (19,5)	35 (17,5)	29 (14,5)	200		
Fidgeting	Speech Therapy	20 (20,0)	34 (34,0)	11 (11,0)	14 (14,0)	13 (13,0)	8 (8,0)	100	7,244	.005
	Social Work	20 (20,0)	20 (20,0)	10 (10,0)	19 (19,0)	15 (15,0)	16(16,0)	100		
	Total	40 (20,0)	54 (27,0)	21 (10,5)	33 (16,5)	28 (14,0)	24(12,0)	200		
Difficulty Waiting one's turn	Speech Therapy	43 (43,0)	30 (30,0)	7 (7,0)	11 (11,0)	6 (6,0)	3 (3,0)	100	14,095	.005
	Social Work	33 (33,0)	28 (28,0)	19 (19,0)	3 (3,0)	10 (10,0)	7 (7,0)	100		
	Total	76 (38,0)	58 (29,0)	26 (13,0)	14 (7,0)	16 (8,0)	10 (5,0)	200		

*p < .05, ***p < .001

Table 4, entitled "Chi-Square Results for Physical-Emotional Categories by Department of Attendance," clearly displays the frequency and percentage of various behavioral and emotional tendencies related to departmental attendance. These categories include multitasking, emotional reactivity, constant movement, fidgeting and difficulty waiting one's turn. The table highlights chi-squared statistics for each category, indicating the significance level of the findings, with "NS" indicating non-significant p-values. It reveals statistically significant differences in ADHD-related behaviors between Speech Therapy and Social Work. While multitasking with incomplete tasks is common and occurs in the speech-language therapy group, emotional reactivity and sensitivity are significantly higher in the social work group). There is a notable frequency of certain behaviors like constant movement and fidgeting reported in both departments, with Speech Therapy students showing a higher tendency towards these behaviors. Chi-squared tests indicate significant differences in these behaviors, except for discomfort with stillness, suggesting specific departmental influences on students' behaviors and emotional experiences. Behaviors like multitasking with incomplete tasks, emotional reactivity, and difficulty waiting one's turn show significant variances between the departments ($p < .05$). However, the differences in discomfort with stillness are not statistically significant ($p = .789$).

Discussion

The results of this study confirm the initial hypothesis by illustrating significant differences in ADHD-related characteristics between students from different departments. The distinct feelings of underachievement observed between the Speech Therapy and Social Work departments highlight the central role of environmental and disciplinary influences in the manifestation or reinforcement of these characteristics. The data support the hypothesis regarding feeling underachieved. Specifically, the Speech Therapy department exhibited a moderate feeling of underachievement, whereas this feeling was more robustly manifested, to a moderate degree, within the Social Work department.

The empirical findings of the research identify specific behaviors associated with ADHD traits, including challenges in prioritizing tasks and maintaining focus. These behaviors differ between departments, particularly in aspects such as maintaining interest in reading material and sustaining focus during group dialogue. The findings of the study underscore pronounced discrepancies between the two departments in terms of their ability to maintain focus in different academic scenarios. Such observations indirectly support the hypothesis centered on attentional drift during monotonous or minimally stimulating tasks.

Although the results shed light on the facets of emotional instability and its manifestations, they fall short of addressing impulsivity in both behavior and decision-making processes. Consequently, the verdict on this hypothesis remains inconclusive with the evidence available. The evidence gathered supports the hypothesis, revealing that a significant proportion of students in both departments experience marked emotional instability, such as heightened irritability. It should be noted that the Speech Therapy department showed a slightly higher predisposition in this regard. The data presented do not allow direct comment on motor restlessness or hyperactivity. Therefore, conclusions regarding this hypothesis remain uncertain based on the evidence.

In the discussion of this study's findings, the interdepartmental discrepancies ADHD-like traits among university students are notable. These differences were not only pronounced between the Speech Therapy and Social Work departments but also indicative of the varied influence

that environmental and academic demands exert on students. The distinct underachievement patterns observed suggest that these demands may differentially affect students' perceptions of success and their academic self-concept (Birchwood & Daley, 2010, Kwon et al., 2018).

While previous literature has often highlighted the persistence of ADHD symptoms into adulthood, the present study lends weight to the argument that these symptoms can substantially influence the academic trajectories of university students. (Du Paul & Stoner, 2014). The difficulties in maintaining focus, particularly during reading and group discussions, point to a potential mismatch between the students' needs and the traditional educational delivery methods.

The emotional dimensions of ADHD, as seen in the variability of emotional reactivity and irritability across departments, align with the broader recognition of emotion dysregulation as a significant component of ADHD (Martz et al., 2023, Wilms, 2020). Although the current study did not directly measure hyperactivity, the relative impact of emotional dysregulation suggests that this component may play a more pronounced role in the academic difficulties faced by university students with ADHD than previously understood.

Moreover, the study's results have important implications for university policies and support programs. The observed challenges in task prioritization and multitasking call for the development of targeted interventions that can assist students in managing their academic workload more effectively (Gawrilow et al., 2011, Siklos et al., 2004). This is critical as the ability to navigate complex and demanding educational environments is essential for academic success.

In light of these findings, the study emphasizes the necessity for universities to adopt a more nuanced approach in supporting students with ADHD. The provision of services that address both the cognitive and emotional aspects of ADHD is crucial. Additionally, the data suggest interventions should be tailored not only to the specific symptoms of ADHD but also to the disciplinary contexts within which students operate (Siouti et al., 2023; Theodoratou et al., 2023a, Theodoratou et al., 2023b; Siouti et al., 2023).

Conclusion

The primary aim of screening for ADHD-related traits was achieved, revealing that significant variations do exist between departments, thus confirming our hypotheses regarding both the presence of such traits and the differences in their severity and manifestation. In conclusion, the study provided a nuanced understanding of ADHD-related traits among students from the Speech Therapy and Social Work departments of a Greek university. Departmental Variation. The hypothesis of departmental variation in the presence and severity of ADHD-related traits was confirmed. Significant differences were observed between the two departments, particularly in the Speech Therapy department where there was a notable presence of impulsive communication, difficulty with task prioritization, and discomfort with stillness, among others. These findings suggest department-specific patterns that could necessitate ADHD evaluations. Feelings of Academic Underachievement: The hypothesis regarding feelings of academic underachievement was also confirmed. A considerable proportion of students, especially from the Social Work department, reported moderate underachievement, indicating this feeling is present and may be associated with ADHD-related traits.

The hypothesis concerning challenges in information processing was partially confirmed. While the study did not directly measure cognitive overload, indicators such as difficulty maintaining focus during reading and group discussions, and excessive mental chatter suggest potential information processing challenges among students. As far as cognitive engagement was concerned, the study confirmed the hypothesis that students potentially requiring ADHD evaluation may struggle with attention disorientation during monotonous tasks. A significant number of respondents from both departments reported difficulty focusing on boring or challenging tasks. The hypothesis on impulsivity was substantiated, particularly in the Speech Therapy department, where impulsive speech and decision-making were reported. The Social Work department also displayed impulsivity but to a lesser extent, indicating varying levels of this trait among the departments.

Emotional regulation was a confirmed concern, as seen in the reported feelings of irascibility, mood instability, and being easily upset. These traits were prominent in both departments, supporting the hypothesis that students with potential ADHD traits may exhibit higher levels of emotional instability. The hypothesis about motor restlessness was also confirmed. A consistent percentage of students from both departments reported continuous movement, discomfort with stillness, and difficulty waiting their turn, which are indicative of restlessness and hyperactivity.

Overall, the study's results emphasize the importance of ADHD screening and the need for department-specific strategies to support students with ADHD traits. These findings underline the relevance of tailored interventions to enhance academic and social well-being in university settings.

Limitations

The study focused on female Greek university students from two departments, which means the findings might not necessarily apply to other groups, such as different genders, nationalities, or students from other disciplines. The data, gathered through personal interviews based on questionnaires, could have some biases, including the possibility that participants might provide answers they deem socially acceptable or forget certain details.

The selection of participants didn't consider factors like origin, family background, or socioeconomic status. This could mean that some groups might be more represented than others, affecting the overall results. The data collection spanned from January to May 2022, a relatively short duration. This timeframe might not account for changes in ADHD traits that could occur due to different seasons or academic semesters.

In choosing to use only fully completed questionnaires, the study may have missed out on some valuable insights from those who only partially filled them out. This could also introduce a slight bias towards those who finished the entire questionnaire. While the study used the standard probability of $p < 0.05$ to determine what's statistically significant, there might be some trends or patterns that didn't meet this

standard but are still noteworthy. Lastly, the questionnaire, which took about 15 minutes to complete, could lead to response fatigue. Participants might have become tired or less attentive as they progressed, affecting the quality of their responses. In conclusion, the study, while offering valuable insights, has some limitations in its approach and method that should be considered when interpreting the findings.

Strengths

The questionnaire was thoughtfully prepared, keeping in mind university students and referencing scales like the Brown Attention-Deficit Disorder Symptom Assessment Scale (BADDS). This approach aims to be relevant and specific to the study's target group.

The research has a narrow focus on students from the speech therapy and social work departments of a Greek university. This provides a closer look into these areas, attempting to contribute to the existing body of knowledge. While many studies have explored ADHD traits in different populations, this research offers a fresh perspective by concentrating on specific university departments in Greece. Ethical guidelines were followed diligently in the study. This effort is made to ensure that the research's findings are credible and can be considered by the academic community.

Data collection was comprehensive, comprising 23 closed-ended questions about various aspects of ADHD. The aim was to get a well-rounded understanding of ADHD in the selected group. For data analysis, the study employed the SPSS software, trying to be thorough and systematic in understanding the results. The study had a clear objective in mind: to screen students for certain characteristics related to ADHD. This provides direction to the research and hopes to make its findings useful. An interesting part of the research was looking into potential differences between students in Speech Therapy and those in Social Work.

This study explores the idea that academic disciplines might have some influence on ADHD traits. The results explain the differential prevalence of ADHD-like traits across academic disciplines, highlighting the heterogeneity of student challenges within university settings. The emphasis on early and proactive identification strategies corroborates the importance of timely and specialized interventions tailored to specific

departmental needs. Within the broader ADHD research context, this study provides a unique perspective on the manifestation of ADHD-like traits in distinct academic environments. The findings, with the established ADHD literature, underscore the imperative for department-specific interventions and support mechanisms in universities. The methodological rigor and specificity of this research contribute significantly to ADHD discourse, particularly in the context of higher education. It offers a deeper understanding of the interplay between academic specialization and ADHD traits. For future research, a more granular examination of the underlying factors contributing to observed variations is recommended. Additionally, exploring the interrelationship between ADHD traits, academic-induced stress, and specific educational pressures will further refine intervention strategies in academic settings.

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